

ICCBMA 2024 Special Session

Title: Uncertainty Representation, Quantification, Propagation, and Management in CBM

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Description:

This special session aims to deepen our understanding of the complex interplay between the different sources of uncertainty that affect degradation processes and their impact on the design of condition-based maintenance (CBM) strategies. In CBM, decisions are guided by observed and anticipated system conditions rather than rigid schedules, making uncertainty a critical factor that shapes the effectiveness of implemented strategies. The session will explore how uncertainty manifests across different elements of CBM, such as diagnostics, prognostics, and decision-making. Through an exploration of uncertainty representation, quantification, propagation, and management, the session aims to underscore the significance of acknowledging inherent uncertainties in CBM and to advance our knowledge and methodologies in this domain. Presentations of cutting-edge research, insightful case studies, and discussions on practical approaches to address uncertainty within the era of CBM are welcome.